

## **REMARKS**

In the Office Action, Claims 1-7, 10 and 13-27 were examined. Claims 1, 2, 4-7, 10 and 13-27 stand rejected and Claim 3 is objected to. In response to the Office Action, Claims 2-4, 6, 8, 10, 13, 14, 17, 28 and 21-27 are amended, Claims 1 and 5 are cancelled and no claims are added. Applicants respectfully request reconsideration of pending Claims 2-4, 6, 7, 10 and 13-27, in view of the following remarks.

### **I. Claim Objections**

The Examiner objects to Claims 10 and 24 under 37 C.F.R. §1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Regarding Claims 10 and 24, Claims 10 and 24 are amended to depend from independent Claim 7. Applicants respectfully submit that the introduction of additional features within Claims 10 and 24 further limit the subject matter of independent Claim 7, from which Claims 10 and 24 now depend.

Accordingly, Applicants respectfully submit that Claims 10 and 24, based on Applicants' amendments, are now in proper dependent form and further limit the subject matter of previous Claim 7. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the objection to Claims 10 and 24.

### **II. Claims Rejected Under 35 U.S.C. §102**

The Examiner rejects Claims 1-2, 4-7, 10, 13-15, 17-19 and 21-27 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,509,123 issued to Dobbins ("Dobbins"). Applicants respectfully traverse this rejection.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" Lindemann Maschinenfabrik v. American Hoist & Derrick ("Lindemann"), 730 F.2d 452, 1458 (Fed. Cir. 1994)(emphasis added). Additionally, each and every element of the claim must be exactly disclosed in the anticipatory reference. Titanium Metals Corp. of America v. Banner ("Banner Titanium"), 778 F.2d 775, 777 (Fed. Cir. 1985).

Regarding Claim 2, Claim 2 recites the following claim features, which are neither taught nor suggested by either Dobbins or the references of record:

selecting one or more software stage objects from an object-oriented programming model wherein the software stage objects encapsulate and represent functionality performed by underlying hardware to process a packet, the software stage objects including:

- one or more link stage objects to define a physical interface and packet framing,
- one or more classifier stage objects to direct filtering and matching algorithms on packets,
- one or more packet flow stage objects to direct packet flow policy,

outputs, a scatter stage object to direct packet routing to scatterer object  
packets, a gather stage object to direct packet collecting and routing scattered  
an editor stage object to direct packet modification, and  
a monitor stage object to direct gathering of statistical information  
regarding packets and packet flows;  
programming the one or more selected software stage objects to  
perform a desired packet processing functionality; and  
connecting the one or more programmed software stage objects to form a  
directed graph of packet flow to complete definition of the desired packet processing  
functionality, such that underlying hardware is directed to process packets in  
accordance with the desired packet processing functionality. (Emphasis added.)

Conversely, Dobbins teaches an object-oriented architecture for network layer routing, which distributes function and system behavior into autonomous router objects. As taught by Dobbins:

The distributed object architecture of the present invention defines all of the functional aspects to implement a generalized, common protocol independent framework which is inherited by every protocol specific object upon instantiation. (col. 5, lines 31-35.) (Emphasis added.)

As further described by Dobbins, the architecture includes subsystems such as managed objects, which allow router objects to have embedded network management; resource objects, which provide a common system template regardless of the protocol specific object; forward objects, which provide a distributed forwarding architecture that scales to a new network interfaces and media types; and routing protocol objects, which provide the ability to exchange network topology information. (See, col. 6, lines 36-67.)

Based on the passages above, Applicants respectfully submit that Dobbins fails to disclose, teach or suggest software stage objects, such as the link, classifier, packet flow, scatter, gather, editor or monitor stage objects, as recited by Claim 2, as amended.

Furthermore, Dobbins fails to teach the connection of the programmed software stage objects to form a directed graph of packet flow, as recited by amended Claim 2. According to the Examiner, such features are illustrated with reference to FIG. 3A of Dobbins by the link between reference numerals 232-234. (See, pg. 3, ¶2 of Office Action mailed November 30, 2004.) However, as described by Dobbins:

FIG. 3A shows that all objects are connected through a vertical router resource objects plane 207. At the same time, all objects to be managed are connected through a vertical managed object plane 208. (col. 25, lines 54-57.)

Furthermore, as described by Dobbins:

Connections between the different planes are shown by dashed lines 205. These logical connections are through resource objects and a naming tree. (col. 5, lines 51-53.)

Applicants respectfully submit that based on the cited passages above, Dobbins fails to provide the disclosure of the connection of programmed software object stages to form a directed graph of packet flow to complete definition of desired packet processing functionality, as recited by amended Claim 2. However, the case law is clear in establishing that a *prima facie* case requires the disclosure of each and every element of a claim within an anticipatory reference. Id.

Applicants respectfully submit that the Examiner is prohibited from establishing a *prima facie* case of anticipation of amended Claim 2, since the Examiner is prohibited from illustrating the disclosure of the software object stages recited by amended Claim 2, as well as the formation of a directed graph using programmed software object stages, as recited by amended Claim 2, within Dobbins. Id.

Therefore, for at least the reasons described above, Applicants respectfully submit that Claim 2, as amended, is patentable over Dobbins, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claim 2.

Regarding Claims 4 and 6, Claims 4 and 6, based on their dependency from Claim 2, are also patentable over Dobbins, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 4 and 6.

Regarding Claims 7 and 25, Claims 7 and 25 recite the following claim feature, which is neither taught nor suggested by either Dobbins or the references of record:

directing underlying hardware loaded with a directed graph of programmed software stage to process packets in a manner specified using an object-oriented model and compiled to produce the directed graph of programmed software stage objects, wherein the software stage objects encapsulate and represent functionality performed by underlying hardware to process a packet, the software stage objects including:

one or more link stage objects to define a physical interface and packet framing,  
one or more classifier stage objects to direct filtering and matching algorithms on packets,  
one or more packet flow stage objects to direct packet flow policy,  
a scatter stage object to direct packet routing to scatterer object  
outputs,  
a gather stage object to direct packet collecting and routing scattered packets,  
an editor stage object to direct packet modification; and  
a monitor stage object to direct gathering of statistical information regarding packets and packet flows. (Emphasis added.)

For at least the reasons described above with regards to Claim 2, Applicants respectfully submit that Applicants' amendment to Claims 7 and 25 prohibit the Examiner from establishing the disclosure of the various software stage objects, as recited by amended Claims 7 and 25, as well as

the connection of the programmed software object stages to form the directed graph of programmed software object stages to direct underlying hardware to process packets in a specified manner, as recited by Claims 7 and 25. However, the case law is clear in establishing that a *prima facie* case of obviousness requires an anticipatory reference which discloses each and every element of a claim. Id.

Applicants respectfully submit that the Examiner is prohibited from relying on Dobbins as an anticipatory reference to establish a *prima facie* case of anticipation under §102(b), since Dobbins fails to disclose the software stage objects, as recited by Claims 7 and 25, as well as the direction of underlying hardware to process packets in a manner specified according to a directed graph of software stage objects, as recited by Claims 7 and 25.

Consequently, Applicants respectfully submit that the Examiner is prohibited from establishing a *prima facie* case of anticipation of Claims 7 and 25, since Claims 7 and 25, as amended, include features which are neither taught nor suggested by either Dobbins or the references of record. Id. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 7 and 25.

Regarding Claims 10 and 24, Claims 10 and 24, based on their dependency from Claim 7, are also patentable over Dobbins, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 10 and 24.

Regarding Claims 13 and 17, Claims 13 and 17 recite the following claim features, which is neither taught nor suggested by either Dobbins or the references of record:

a memory coupled to the processor, the memory to load a directed graph of programmed software stage objects to direct the processor to process packets in a manner specified using an object-oriented model and compiled to produce the directed graph of programmed software stage objects, wherein the software stage objects encapsulate and represent functionality performed by underlying hardware to process a packet, the software stage objects including:

- one or more link stage objects to define a physical interface and packet framing,
- one or more classifier stage objects to direct filtering and matching algorithms on packets,
- one or more packet flow stage objects to direct packet flow policy,
- a scatter stage object to direct packet routing to scatterer object outputs,
- a gather stage object to direct packet collecting and routing scattered packets,
- an editor stage object to direct packet modification, and
- a monitor stage object to direct gathering of statistical information regarding packets and packet flows. (Emphasis added.)

For at least the reasons described above, Applicants respectfully submit that the Examiner is prohibited from establishing a *prima facie* case of anticipation based on Dobbins, since Dobbins

does not qualify as an anticipatory reference since it fails to disclose each and every element, as recited by amended Claims 13 and 17. Id. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of amended Claims 13 and 17.

Regarding Claims 14 and 15, Claims 14 and 15, based on their dependency from Claim 13, are also patentable over Dobbins, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 14 and 15.

Regarding Claims 18, 19 and 21, Claims 18, 19 and 21, based on their dependency from Claim 17, are also patentable over Dobbins, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 18, 19 and 21.

### **III. Claims Rejected Under 35 U.S.C. §103**

The Examiner rejects Claims 16 and 20 under 35 U.S.C. §103(a) as being unpatentable over Dobbins in view of U.S. Patent No. 6,754,219 issued to Cain ("Cain"). Applicants respectfully traverse this rejection.

Regarding the Examiner's citing of Cain, Applicants respectfully submit that the Examiner's citing of Cain fails to rectify the deficiencies of Dobbins to teach or suggest the software stage objects, as recited by amended Claims 13 and 17, as well as the formation of a directed graph of software objects to direct underlying hardware to process packets, as described by the directed graph. Hence, Applicants respectfully submit that Claims 13 and 17, as amended, are patentable over the combination of Dobbins in view of Cain.

Consequently, Claims 16 and 20, based on their dependency from Claims 13 and 17, are also patentable over the combination of Dobbins in view of Cain. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claims 16 and 20.

### **IV. Allowable Subject Matter**

The Examiner has indicated that Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. However, Claim 3 is also patentable, based on its dependency from amended Claim 2. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the objection to Claim 3 and allow Claim 3 based on its dependency from allowable amended Claim 2.

### CONCLUSION

In view of the foregoing, it is submitted that Claims 2-4, 6, 7, 10 and 13-27 patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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#### **CERTIFICATE OF MAILING:**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on January 27, 2005.



Marilyn Bass

January 27, 2005